[1.-A hook for a hook and loop fastening system comprising:

a base;

a stem connected at its lower end to the base, the stem having an outer side and an inner side;

a crook having a first end and a hook tip, the first end connected to the stem, the crook projecting upwards from the stem and then downwards towards the base in a substantially smooth curve ending at the hook tip;

the hook having a width, a height, and a displacement volume, wherein displacement volume is the volume of a rectangular parallelepiped having a bottom plane, first and second side planes, first and second end planes and a top plane; the bottom plane orientated parallel to the base and tangent to the hook tip, the top plane parallel to the base and tangent to the top of the hook at the point where the crook achieves its maximum distance from the base, the side planes laying in the plane of the sides of the hook; the first end plane perpendicular to the bottom plane at the point where the bottom plane intersects the stem at its outer side, the second end plane perpendicular to the bottom plane and tangent to the outermost portion of the hook tip;

wherein the displacement volume of the hook is less than 6×10^{-6} cubic inches (9.83×10^{-5} cc).]

[2. The hook of claim 1 wherein the crook height is less than 0.012 inches.]

[3. The hook of claim 1 wherein the thickness of the hook is less than 0.010 inches.]

[4. The hook of claim 1 wherein the footprint of the hook is less than 1.5×10^{-4} square inches.]

[5. A hook for a hook and loop fastening system comprising:

a base;

a stem connected at its lower end to the base, the stem having an outer side and inner side;

a crook having a first end and a hook tip, the first end connected to the stem, the crook projecting upwards from the stem and then downwards towards the base in a substantially smooth curve ending at the hook tip;

the hook having a width, a height and a displacement volume, wherein displacement volume is the volume of a rectangular parallelepiped having a bottom plane, first and second side planes, first and second end planes and a top plane; the bottom plane orientated parallel to the base and tangent to the hook tip, the top plane parallel to the base and tangent to the top of the hook at the point where the crook achieves its maximum distance from the base, the side planes laying in the plane of the sides of the hook; the first end plane perpendicular to the bottom plane at the point where the bottom plane intersects the stem at its outer side, the second end plane perpendicular to the bottom plane and tangent to the outermost portion of the hook tip;

wherein the displacement volume of the hook is less than 4×10^{-6} cubic inches.]

[6. The hook of claim 5 wherein the crook height is less than 0.012 inches.]

[7. The hook of claim 5 wherein the thickness of the hook is less than 0.010 inches.]

[8. The hook of claim 5 wherein the footprint of the hook is less than 1.5×10^{-4} square inches.]

9. In a hook for a hook and loop fastener having a profile defined by an inner generally concave face and an outer generally convex face, the hook comprising a planar base member intimately engaging a tapered base portion and extending there from to join, in a transition region, a tapered hook portion able to engage a loop applying a force to the hook portion substantially normal to the planar base member and terminating in a free end, the taper of the hook portion being much less than the taper of the base portion wherein the hook tapers continuously downwardly in width from the tapered base portion to the free end such that a loop engaging the hook in tension, with the force being substantially normal to the planar base member, will cause the hinging or buckling of the hook at a location adjacent the outer face in the transition region as the hook deforms under the applied force and such that a loop engaging the hook in shear, with the force substantially parallel to the planar base member, will transmit bending force through the tapered base portion between the location of buckling and the planar base member, the hook being of substantially constant thickness and having a substantially rectangular traverse cross section and a displacement volume, wherein displacement volume is the volume of a rectangular parallelepiped having a bottom plane, first and second side planes, first and second end planes and a top plane; the bottom plane oriented parallel to the base and tangent to the hook tip, the top plane parallel to the base and tangent to the top of the hook at the point where the hook achieves its maximum distance from the base, the side planes laying in the plane of the sides of the hook; the first end plane perpendicular to the bottom plane at the point where the bottom plane intersects the stem at its outer side, the second end plane perpendicular to the bottom plane and tangent to the outermost portion of the hook tip; wherein the volume displacement of the hook is less than 6×10^{-6} cubic inches (9.83×10^{-5} cubic centimeters).

10. The hook according to claim 9 wherein the inner face in the transition region has an angle to the direction normal to the base member orientated to encourage a loop engaging the hook in shear to move toward the base member.

11. The hook according to claim 9 wherein the crook height of the hook is less than 0.012 inches.

12. The hook according to claim 9 wherein the inner generally concave face is so shaped as to encourage a loop engaging the hook in shear to engage the hook at about the location of buckling.

13. The hook portion of a hook and loop assembly comprising a multiplicity of hooks, having the configuration of the hook of claim 9 assembled into a multiplicity of hooks onto and extending from a common integral planar base.

14. The hook portion of a hook and loop assembly according to claim 13 wherein the multiplicity of hooks are aligned in a given direction so that adjacent rows of hooks face in opposite directions.

15. The hook portion of a hook and loop assembly according to claim 13 wherein the multiplicity of hooks are aligned in a given direction so that all hooks face in the same direction.

16. A plastic hook product for a hook and loop fastening system having hooks sized and shaped to be capable of engaging loops of a loop product with a pile height of approximately 0.04 inches or less, the hook product comprising a multiplicity of plastic hooks in adjacent rows and extending from a common integral planar base, each of the multiplicity of hooks comprising:

a stem connected at its lower end to the base by being molded integrally with the base, the stem having an outer side and an inner side;

a crook having a first end and a hook tip, the first end connected to the stem, the crook projecting upwards from the stem and then downwards towards the base in a substantially smooth curve ending at the hook tip;

the hook having a width, a height, and a displacement volume, wherein displacement volume is the volume of a rectangular parallelepiped having a bottom plane, first and second side planes, first and second end planes and a top plane; the bottom plane orientated parallel to the base and tangent to the hook tip, the top plane parallel to the base and tangent to the top of the hook at the point where the crook achieves its maximum distance from the base, the side planes laying in the plane of the sides of the hook; the first end plane perpendicular to the bottom plane at the point where the bottom plane intersects the stem at its outer side, the second end plane perpendicular to the bottom plane and tangent to the outermost portion of the hook tip;

wherein the displacement volume of the hook is less than 6×10^{-6} cubic inches (9.83×10^{-5} cc).

17. In a plastic hook product for a hook and loop fastener, the hook product having a multiplicity of plastic hooks sized and shaped to be capable of engaging loops of a loop product with a pile height of approximately 0.04 inches or less, hooks of the multiplicity of hooks each having a profile defined by an inner generally concave face and an outer generally convex face, the hooks of the multiplicity of hooks each comprising a planar base member intimately engaging a tapered base portion, by being molded therewith, and extending there from to join, in a transition region, a tapered hook portion able to engage a loop applying a force to the hook portion substantially normal to the planar base member and terminating in a free end, the taper of the hook portion being much less than the taper of the base portion wherein the hook tapers continuously downwardly in width from the tapered base portion to the free end such that a loop engaging the hook in tension, with the force being substantially normal to the planar base member, will cause the hinging or buckling of the hook at a location adjacent the outer face in the transition region as the hook deforms under the applied force and such that a loop engaging the hook in shear, with the force substantially parallel to the planar base member, will transmit bending force through the tapered base portion between the location of buckling and the planar base member, the hook being of substantially constant thickness and having a substantially rectangular traverse cross section and a displacement volume, wherein displacement volume is the volume of a rectangular parallelepiped having a bottom plane, first and second side planes, first and second end planes and a top plane; the bottom plane oriented parallel to the base and tangent to the hook tip, the top plane parallel to the base and tangent to the top of the hook at the point where the hook achieves its maximum distance from the base, the side planes laying in the plane of the sides of the hook; the first end plane perpendicular to the bottom plane at the point where the bottom plane intersects the stem at its outer side, the

second end plane perpendicular to the bottom plane and tangent to the outermost portion of the hook tip; wherein the volume displacement of the hook is less than 6×10^{-6} cubic inches (9.83×10^{-5} cubic centimeters),

the multiplicity of plastic hooks being in adjacent rows, a common integral planar base of said hook product being formed by base members of all of the multiplicity of plastic hooks.

18. A plastic hook product for a hook and loop fastening system having hooks sized and shaped to be capable of engaging loops of a loop product with a pile height of approximately 0.04 inches or less, the hook product comprising a multiplicity of plastic hooks in adjacent rows facing in opposite directions and extending from a common integral planar base, each of the multiplicity of hooks comprising:

a stem connected at its lower end to the base by being molded integrally with the base, the stem having an outer side and an inner side;

a crook having a first end and a hook tip, the first end connected to the stem, the crook projecting upwards from the stem and then downwards towards the base in a substantially smooth curve ending at the hook tip;

the hook having a width, a height, and a displacement volume, wherein displacement volume is the volume of a rectangular parallelepiped having a bottom plane, first and second side planes, first and second end planes and a top plane; the bottom plane orientated parallel to the base and tangent to the hook tip, the top plane parallel to the base and tangent to the top of the hook at the point where the crook achieves its maximum distance from the base, the side planes laying in the plane of the sides of the hook; the first end plane perpendicular to the bottom plane at the point where the bottom plane intersects the stem at its outer side, the second end plane perpendicular to the bottom plane and tangent to the outermost portion of the hook tip;

wherein the displacement volume of the hook is less than 6×10^{-6} cubic inches (9.83×10^{-5} cc).

19. A plastic hook product for a hook and loop fastening system having hooks sized and shaped to be capable of engaging loops of a loop product with a pile height of approximately 0.04 inches or less, the hook product comprising a multiplicity of plastic hooks in adjacent rows and extending from a common integral planar base, each of the multiplicity of hooks comprising:

a stem connected at its lower end to the base by being molded integrally with the base, the stem having an outer side and an inner side;

a crook having a first end and a hook tip, the first end connected to the stem, the crook projecting upwards from the stem and then downwards towards the base in a substantially smooth curve ending at the hook tip;

the hook having a width, a height, and a displacement volume, wherein displacement volume is the volume of a rectangular parallelepiped having a bottom plane, first and second side planes, first and second end planes and a top plane; the bottom plane orientated parallel to the base and tangent to the hook tip, the top plane parallel to the base and tangent to the top of the hook at the point where the crook achieves its maximum distance from the base, the side planes laying in the plane of the sides of the hook; the first end plane perpendicular to the bottom plane at the point where the bottom plane intersects the stem at its outer side, the second end plane perpendicular to the bottom plane and tangent to the outermost portion of the hook tip;

wherein the displacement volume of the hook is less than 6×10^{-6} cubic inches (9.83×10^{-5} cc), the hook product being produced by the method comprising:

integrally molding the base and hooks using a molding roller having open-ended but otherwise closed

hook-shaped mold cavities in its periphery, including filling the mold cavities with the base in contact with the periphery, and

pulling the base progressively away from the periphery of the molding roller and progressively pulling the hooks longitudinally from the mold cavities.

20. The hook product of any of claims 16-19 wherein the displacement volume is less than 4×10^{-6} cubic inches.

21. The hook product of any of claims 16-19 wherein for each hook the crook height is less than 0.012 inches.

22. The hook product of any of claims 16-19 wherein for each hook the thickness of the hook is less than 0.010 inches.

23. The hook product of any of claims 16-19 wherein the footprint of each hook is less than 1.5×10^{-4} square inches.

24. The hook product of claim 17 wherein the inner face of the transition region has an angle to the direction normal to the base member oriented to encourage a loop engaging the hook to move toward the base member.

25. The hook product of claim 17 wherein the inner generally concave face is so shaped as to encourage a loop engaging the hook in shear to engage the hook at about the location of buckling.

26. The hook product of any of claims 16, 18 or 19 wherein the multiplicity of hooks face in the same direction.

27. The hook product of any of claims 16, 18 or 19 wherein the hooks have differing orientations to provide multidirectional shear operation.

28. The hook product of claim 19, wherein the method of producing the hook product further comprises, prior to pulling, cooling each of the hooks sufficiently to retain its shape without the aid of its mold cavity and to be sufficiently resilient to return to its desired shape after being pulled longitudinally from its mold cavity while still being flexible enough to permit such removal without destructive stresses being reached in the hooks.

29. The hook product of claim 19, each hook being tapered and including concave fillets where the stem is connected to the base, the taper and the concave fillets coupled with the generally arcuate shape of the crook portion providing removal easing clearances facilitating the removal of the hook from its mold cavity by pulling longitudinally from its mold cavity.